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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,024	09/03/2002	Kari Holopainen	FORSAL-36	5860
20455	7590	09/15/2004	EXAMINER	
LATHROP & CLARK LLP 740 REGENT STREET SUITE 400 P.O. BOX 1507 MADISON, WI 537011507			NGUYEN, JIMMY T	
			ART UNIT	PAPER NUMBER
			3725	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/070,024

**Applicant(s)**

HOLOPAINEN ET AL.

**Examiner**

Jimmy T Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-29 and 31-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-19 and 31-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 022602 and 100702.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 26-28 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 26-28, it is unclear what structural interrelationship exists between the rolls of the roll stacks and the rolls (i.e. the shoe roll, the top roll, and the bottom roll) as claimed in the preceding claim 14.

Regarding claim 31, there is no antecedent basis for "the roll stack" in the claim.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

**Claims 29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Beckers (US 6,305,280).** Becker discloses a calender comprising: a frame (16); a first roll stack having a top shoe roll (4) mounted to the frame, a first press roll (7) beneath the top roll, a first

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intermediate roll (8) beneath the first press roll; a second roll stack having a second intermediate roll (9) beneath the first intermediate roll, a second press roll (10) beneath the second intermediate roll, a bottom shoe roll (13) beneath the second press roll, wherein the first and the second intermediate rolls are shoe rolls that have outer shells (14), a row of shell-loading shoe means (18) for loading the first intermediate roll against the first press roll and for loading the second intermediate roll against the second press roll, or alternatively to load the first intermediate roll against the second intermediate roll (fig. 1). The first and the second intermediate rolls are fixedly mounted on the frame (figs. 1-3)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 14, 16, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirvonen (US 5,938,859), in view of Ehrola et al. (hereinafter "Ehrola") (US 5,897,476).**

Regarding claims 14, 16 and 19, Hirvonen discloses a calender having a plurality of calender rolls arranged one upon the other (see fig. 2), at least one profiling nip (a nip between roll (23) and roll (24)), a shoe roll (30) is located between a top (25) and a bottom (23) calender rolls; the shoe roll comprises an outer shell (31) and a plurality of rows of internal shell loading means (34). Hirvonen discloses the outer shell of the shoe roll is of composite material (steel) (col. 5, lines 21-22). Hirvonen does not disclose the outer shell of the shoe roll is being formed

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by the specific type of composite material as claimed. The patent to Ehrola, teaches that it is old and well known in the calendering art to provide a shoe roll (30) that has an outer shell (11) made of a continuous-fibre reinforced composite material, wherein the continuous-fibre reinforced composite material includes reinforced epoxy (col. 3, line 58). Ehrola teaches the outer shell with this type of composite material in order to provide the outer shell more rigidity in the direction of the circumference than in the axial direction (see abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the outer shell of Hirvonen's shoe roll with the specific type of composite material, as taught by Ehrola, in order to provide the outer shell more rigidity in the direction of the circumference than in the axial direction.

As to the specific range of an angle as claimed (claims 20-21), Hirvonen, as modified by Ehrola, discloses that the proportion of the fibres is made an angle of about 5° to about 25° in relation to the direction of the circumference of the outer shell of the shoe roll. Therefore, it would have been obvious to one having ordinary skill in the art the time the invention was made to have a proportion of the fibres at an angle of over 45° and between the range of 70° to 90°, since such general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involved only routine skill in the mechanical art.

**Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirvonen and Ehrola et al., as applied to claim 14 above, further in view of van Haag (US 5,419,242).** Hirvonen discloses the shoe roll is a hydraulically controlled roll (col. 3, lines 8-14), the composite shell is supported from a non-rotating central shaft (33) by a hydraulic loading

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means (35). Hirvonen further discloses that any other loading means could be used to support the shell (col. 5, lines 39-40). The van Haag reference is an example of one of many existing difference solutions for supporting the shell in a shoe roll. The patent to van Haag discloses a shell (4) of a shoe roll is supported from a non-rotating shaft (7) by means of hydrostatic loading arrangements that has rows of loading shoes (6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace Hirvonen's loading means, with the type of loading means as taught by van Haag, so as to support the shell in the shoe roll.

**Claims 14-15, 32 and as best understood, claims 26-28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckers (US 6,305,280), in view of Ehrola et al. (hereinafter "Ehrola") (US 5,897,476).**

Beckers discloses the invention substantially as claimed as set forth above (see similar rejections to claims 29 and 31). Becker further discloses that the first and the second intermediate rolls can be separated from contact with rolls of their own roll stack into nip contact with each other (col. 5, lines 27-19 and col. 6, lines 4-12). Beckers does not disclose the outer shells of the shoe rolls are being formed by the specific type of composite material as claimed. The patent to Ehrola, teaches that it is old and well known in the calendering art to provide a shoe roll (30) that has an outer shell (11) made of a continuous-fibre reinforced composite material, wherein the continuous-fibre reinforced composite material includes reinforced epoxy (col. 3, line 58). Ehrola teaches the outer shell with this type of composite material in order to provide the outer shell more rigidity in the direction of the circumference than in the axial direction (see abstract).

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the outer shells of Beckers's shoe rolls with the specific type of composite material, as taught by Ehrola, in order to provide the outer shells more rigidity in the direction of the circumference than in the axial direction.

**Claims 14, 17-18 and 24-25, are rejected under 35 U.S.C. 103(a) as being unpatentable over Korhonen et al. (hereinafter "Korhonen") (US 5,590,593), in view of Ehrola et al. (hereinafter "Ehrola") (US 5,897,476).** Korhonen discloses a calender comprising: a top shoe roll (16), a bottom shoe roll (13), an intermediate roll (15) positioned between the top and the bottom shoe rolls (fig. 1), a shoe roll (14) positioned between the top and the bottom shoe rolls (fig. 1), the shoe roll having an outer shell (21) and a row of loading shoe means (23), the shoe roll is separable from a nip forming contact with the intermediate/ press roll (15) (fig. 2c). Korhonen does not disclose the outer shell of the shoe roll is being formed by the specific type of composite material as claimed. The patent to Ehrola, teaches that it is old and well known in the calendering art to provide a shoe roll (30) that has an outer shell (11) made of a continuous-fibre reinforced composite material, wherein the continuous-fibre reinforced composite material includes reinforced epoxy (col. 3, line 58). Ehrola teaches the outer shell with this type of composite material in order to provide the outer shell more rigidity in the direction of the circumference than in the axial direction (see abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the outer shell of Korhonen's shoe roll with the specific type of composite material, as taught by

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Ehrola, in order to provide the outer shell more rigidity in the direction of the circumference than in the axial direction.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art listed on the attached PTO 892 are cited to show relevant calendar.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy T Nguyen whose telephone number is (703) 305-5304. The examiner can normally be reached on Mon-Thur 8:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allen Ostrager can be reached on (703) 308-3136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JTNguyen  
September 10, 2004



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